United States Patent [19]

Wiley

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[54] **VARIABLE FOCUS LENS**

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[52] **U.S. Cl.** ..... **623/6**; 351/160 H; 351/161; 351/176; 359/94

[58] **Field of Search** ..... 623/4-6; 350/347 V, 362; 351/160 H, 161, 176

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[57] **ABSTRACT**

A variable focus lens apparatus includes a transparent, generally circular envelope, a transparent gel having a relatively high resistance to flow encased in the envelope, and a plurality of light refractive particles suspended in a predetermined orientation in the gel. When an external force field is applied to the lens apparatus, the selectively focusable particles are responsive for changing to a new orientation with respect to said envelope for selectively adjusting characteristics of the lens apparatus including at least one of the characteristics of power and astigmatism correction, whereby upon removal of the external force, the particles remain in the new orientation within the gel. A control system for controlling at least one of the strength and duration of the force field applied to the particles is connected to coils and a power supply for generating the force field.

20 Claims, 4 Drawing Sheets